

## 5. Claims

We claim:

1. A soft handoff system using IP-in-IP encapsulation between base stations.
2. A mobile terminal that experiences soft handoff between base stations, said soft

handoff using IP-in-IP encapsulation.

3. A soft handoff system comprising:

a correspondent host;

a first base station;

a second base station; and,

a mobile station,

wherein packets from said correspondent host are transmitted to said first base station, wherein said packets are encapsulated with a header and sent to said second base station, and wherein said header is removed from said packet and the content of said packet is transmitted to said mobile station.

4. The system according to claim 3, wherein said packets are exchanged in an IP network.

5. The system according to claim 4, wherein said IP network is part of a CDMA network.

6. The system according to claim 3, wherein a second packet from said correspondent host is transmitted to said second base station, wherein said second packet is encapsulated with a second header and sent to said first base station, and wherein said second header is removed from said second packet and the content of said second packet is transmitted to said mobile station.

7. The system according to claim 3, wherein said mobile station transmits a first data unit to said first base station and said mobile station transmits a second data unit to said second base station.

8. The system according to claim 7, wherein said second base station transmits a second packet containing content received from said mobile station to said correspondent host or to said first base station.

9. A mobile station in communication system, said system including a correspondent host transmitting packets to a first base station, said first base station encapsulating said packets with a header and sending said packets to a second base station, said second base station removing said header from said packet, said mobile station comprising;

a receiver for receiving said packet from said second base station; and

a processor for processing the content of said packet received from said second base station.

10. The mobile station according to claim 9, wherein said packets transmitted to said second base stations are exchanged in an IP network.

11. The mobile station according to claim 10, wherein said IP network is part of a CDMA network.

12. The mobile station according to claim 9, wherein a second packet from said correspondent host is transmitted to said second base station, wherein said second packet is encapsulated with a second header and sent to said first base station, and wherein said second header is removed from said second packet and the content of said second packet is transmitted to said mobile station.

13. The mobile station according to claim 9, wherein said mobile station transmits a first data unit to said first base station and said mobile station transmits a second data unit to said second base station.

14. The mobile station according to claim 13, wherein said second base station transmits a second packet containing content received from said mobile station to said correspondent host or to said first base station.

15. A base station that uses soft handoff with IP-in-IP encapsulation to handoff mobile stations between base stations.

16. A base station in a system, said system including a correspondent host, a second base station, and a mobile station, said base station comprising:

a receiver receiving packets from said correspondent host;

a processor encapsulating said packets with a header;

a transmitter sending said encapsulated packets to said second base station,

wherein said header is removed from said packet and the content of said packet is transmitted to said mobile station.

17. The base station according to claim 16, wherein said packets are exchanged in an IP network.

18. The base station according to claim 17, wherein said IP network is part of a CDMA network.

19. The base station according to claim 16, wherein a second packet from said correspondent host is transmitted to said second base station, wherein said second packet is encapsulated with a second header and sent to said first base station, and wherein said second

header is removed from said second packet and the content of said second packet is transmitted to said mobile station.

20. The base station according to claim 16, wherein said mobile station transmits a first data unit to said first base station and said mobile station transmits a second data unit to said second base station.

21. The base station according to claim 20, wherein said second base station transmits a second packet containing content received from said mobile station to said correspondent host or to said first base station.

22. A method for performing soft handoff using IP-in-IP encapsulation between base stations.

23. A method for performing soft handoff comprising the steps of:  
transmitting a packet from a correspondent host to a first base station;  
encapsulating said packet with a new header;  
transmitting said packet with said new header to a second base station;  
removing said new header at said second base station;  
transmitting content in said packet to a mobile station.

24. The method according to claim 23, wherein said packet is routed in an IP network.

25. The method according to claim 24, wherein said IP network is a part of a CDMA network.

26. The method according to claim 23, further comprising the steps of:  
transmitting a second packet from said correspondent host to said second base station;  
adding a second header to said second packet;

transmitting said second packet and said second header to said first base station;  
removing said second header; and  
transmitting the content contained within said second packet to said mobile station.

27. The method according to claim 23, further comprising the steps of:

receiving a first data unit transmitted from said mobile station at said first base station;

and

receiving a second data unit from said mobile station at said second base station.

28. The method according to claim 27, further comprising the steps of:

receiving a second packet containing content received from said mobile station at said correspondent host or to said first base station.

29. A method for a mobile station to experience soft handoff between base stations using IP-in-IP encapsulation.

30. A method for performing soft handoff for a mobile station, said mobile station being connected to a network including a correspondent host that transmits a packet to a first base station, said first base station encapsulates said packet with a new header and transmits said packet with said new header to a second base station, where said second base station removes said new header at said second base station, said method comprising the steps of:

receiving content in said packet at said mobile station.

31. The method according to claim 30, wherein said packet is routed in an IP network.

32. The method according to claim 31, wherein said IP network is a part of a CDMA network.

33. The method according to claim 30, further comprising the step of:

receiving a second packet at said mobile station, said second packet having been transmitted from said second base station, said second base station having received said packet encapsulated by a second header, said second header being added by said first base station.

34. The method according to claim 30, further comprising the steps of:

transmitting a first data unit from said mobile station to said first base station; and

transmitting a second data unit from said mobile station to said second base station.

35. The method according to claim 30, further comprising the steps of:

transmitting a second packet containing content received from said mobile station to said correspondent host or to said first base station.